

15. The device of claim **10**, wherein:
the beam of light is a laser light beam emitted by a laser diode;
the bioauthentication circuit is configured to authenticate the voiced command using at least one of:
a time domain I/Q analysis of the self-mixing interferometry signal when a sine wave modulation is applied to a bias current of the laser diode, and
a spectrum analysis of the self-mixing interferometry signal when a triangle wave modulation is applied to the bias current of the laser diode.

16. A device, comprising:
a head-mountable frame configured to be worn by a user;
a self-mixing interferometry sensor mounted to the head-mountable frame and configured to emit a beam of light toward skin of the user;
a microphone configured to produce an audio signal; and
an audio conditioning circuit configured to modify the audio signal using a self-mixing interferometry signal of the self-mixing interferometry sensor.

17. The device of claim **16**, wherein:
the self-mixing interferometry signal includes skin vibration information;
the audio conditioning circuit is configured to detect time intervals of speech of the user using the skin vibration information; and
modifying the audio signal includes suppressing background noise during a time segment not in the detected time intervals of speech of the user.

18. The device of claim **17**, wherein the device is an earbud further comprising:

an in-ear speaker; and

a radio transmitter; wherein:

the device transmits the audio signal only during the detected time intervals of speech of the user.

19. The device of claim **17**, wherein:

the device is a headphone further comprising a radio transmitter;

the self-mixing interferometry sensor directs the beam of light toward a location on the user's head proximate to at least one of the temporal bone and the parietal bone; and

the device transmits the audio signal only during the detected time intervals of speech of the user.

20. The device of claim **16**, wherein:

the beam of light is a laser light beam emitted by a laser diode;

the audio conditioning circuit is configured to modify the audio signal using at least one of:

a time domain I/Q analysis of the self-mixing interferometry signal when a sine wave modulation is applied to a bias current of the laser diode, and

a spectrum analysis of the self-mixing interferometry signal when a triangle wave modulation is applied to the bias current of the laser diode.

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